**NAME** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **DATE** \_\_\_\_\_\_\_\_\_\_\_\_\_

**PERIOD** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Class \_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**WorkSheet(1)**

**Q1)Write a verbal expression for each algebraic expression.**

1. 73
2. 4*d*3 − 10
3. 
4. 

**Q2)Write an algebraic expression for each verbal expression.**

1. 15 decreased by twice a number
2. 91 more than the square of a number
3. three fourths the square of *b*
4. two fifths the cube of a number
5. **BOOKS** A used bookstore sells paperback fiction books in excellent condition for $2.50 and in fair condition for $0.50. Write an expression for the cost of buying *x* excellent-condition paperbacks and *f* fair-condition paperbacks.
6. **GEOMETRY** The surface area of the side of a right cylinder can be found by multiplying twice the number π by the radius times the height. If a circular cylinder has radius *r* and height *h*, write an expression that represents the surface area of its side.

**Q3)Evaluate each expression.**

1. 54
2. 5 + 7 · 4
3. 4(3 + 5) − 5 · 4
4. 22 ÷ 11 · 9 − 32
5. 62 + 3 · 7 − 9
6. 3[10 − (27 ÷ 9)]
7. 2[52 + (36 ÷ 6)]
8. 162 ÷ [6(7 − 4)2]
9. 
10. 

**Q4)Evaluate each expression if *a* = 12, *b* = 9, and *c* = 4.**

1. 4*a* + 2*b* − *c*2
2. (*a*2 ÷ 4*b*) + *c*
3. *c*2 · (2*b* − *a*)
4. 2(*a* − *b*)2 − 5*c*
5. 
6. **CAR RENTAL** Ann Carlyle is planning a business trip for which she needs to rent a car. The car rental company charges $36 per day plus $0.50 per mile over 100 miles. Suppose Ms. Carlyle rents the car for 5 days and drives 180 miles.
	1. Write an expression for how much it will cost Ms. Carlyle to rent the car.
	2. Evaluate the expression to determine how much Ms. Carlyle must pay the car rental company.
7. **GEOMETRY** The length of a rectangle is 3*n* + 2 and its width is *n* − 1. The perimeter of the rectangle is twice the sum of its length and its width.
	1. Write an expression that represents the perimeter of the rectangle.
	2. Find the perimeter of the rectangle when *n* = 4 inches.

**Q5)Determine whether each relation is a function. Explain.**

1. 

|  |  |
| --- | --- |
| ***X*** | ***Y*** |
| 1 | -5 |
| -4 | 3 |
| 7 | 6 |
| 1 | -2 |

1. 
2. {(1, 4), (2, -2), (3, -6), (-6, 3), (-3, 6)}
3. {(6, -4), (2, -4), (-4, 2), (4, 6), (2, 6)}
4. *x* = -2
5. *y* = 2

**Q6)If *f*(*x*) = 2*x* − 6 and *g*(*x*) = *x* − 2*x*2, find each value.**

1. *f*(2)
2. 
3. *g*(-1)
4. 
5. *f*(7) − 9
6. *g*(-3) + 13
7. *f*(*h* + 9)
8. *g*(3*y*)
9. 2[*g*(*b*) + 1]
10. **WAGES** Martin earns $7.50 per hour proofreading ads at a local newspaper. His weekly wage *w* can be described by the equation *w* = 7.5*h*, where *h* is the number of hours worked.
	1. Write the equation in functional notation.
	2. Find *f*(15), *f*(20), and *f*(25).

1. **ELECTRICITY** The table shows the relationship between resistance *R* and current *I* in a circuit.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Resistance (ohms)** | 120 | 80 | 48 | 6 | 4 |
| **Current (amperes)** | 0.1 | 0.15 | 0.25 | 2 | 3 |

* 1. Is the relationship a function? Explain.
	2. If the relation can be represented by the equation *IR* = 12, rewrite the equation in functional notation so that the resistance *R* is a function of the current *I*.
	3. What is the resistance in a circuit when the current is 0.5 ampere?